GYPSTEEL PLANK*

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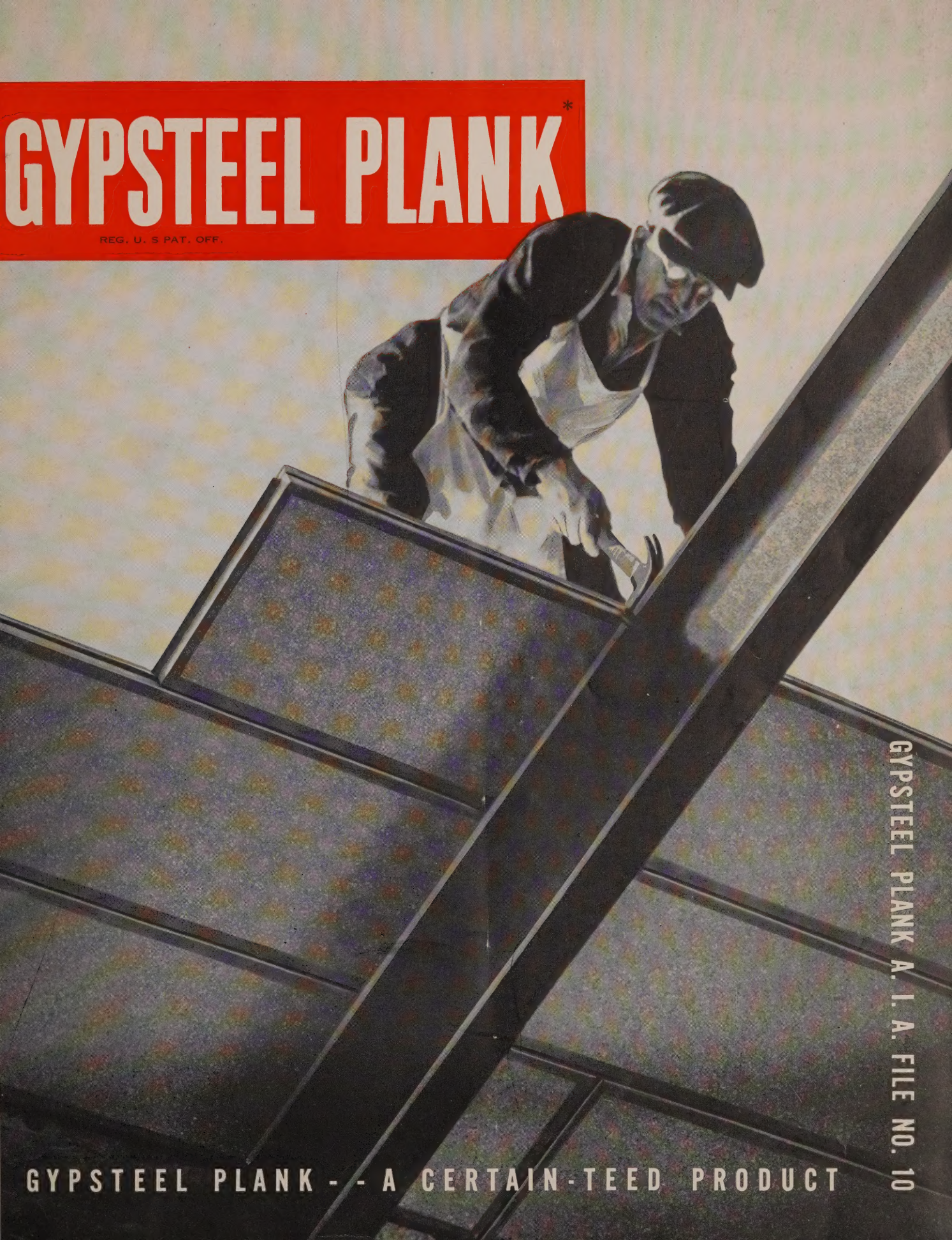

GYPSTEEL PLANK A. I. A. FILE NO. 10

GYPSTEEL PLANK - - A CERTAIN-TEED PRODUCT

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U. S. Army Depot, Conley, Georgia

GYPSTEEL PLANK*

REG. U. S. PAT. OFF.

FOR FIRE-SAFE ROOF DECKS AND STRUCTURAL FLOORS

GYPSTEEL PLANK is designed for use as a fire-safe roof deck and structural floor. Behind its development lies the conception of pre-cast units of gypsum which may be used like lumber. The success in realizing this ideal is proved through the widespread acceptance of Plank by leading architects, engineers and builders.

Gypsteel Plank retains the fire resistive and insulating properties that have always been associated with gypsum. It also has a degree of permanence and freedom from excessive maintenance cost that approaches that of much heavier masonry constructions. It is therefore not surprising to find that Plank is used in important government buildings, prominent hotels and clubs, leading institutional buildings and by well-known firms in every branch of industry.

Plank has also found favor among those who must build economically. It is low in first cost, as well as up-keep, and through its simplicity saves greatly in labor. Being light in weight and adaptable to varying conditions, it makes possible the utmost economy in the design of the supporting frames.

Gypsteel Plank is manufactured in forms and sizes that are similar to lumber and that are easy to handle. Plank may be cut, sawed or bored with ordinary carpenters' tools. Little experience is required for its successful application.

Plank has been subjected to rigid tests by many laboratories of national standing including the National Bureau of Standards. As a result it is widely recognized and accepted.

The design weight of 2″ Plank is only 12 pounds per square foot, more nearly approaching the lightness in weight of wood than any generally accepted construction material of a permanent type. Despite this lightness, strength is not sacrificed. For example, Plank may be used on roofs up to spans of 7 ft. and yet will carry the maximum live load of 40 pounds demanded by most building departments with a factor of safety of more than eight. Comparable safety, on spans up to 5 feet, is offered for floors in buildings of light load capacity.

Exposure to the elements does not permanently affect the strength of Gypsteel Plank. Since no mortar is used, freezing temperatures do not affect the application. No pouring needs to be done. Plank may be applied in any weather that men can work.

Gypsteel Plank is designed for use in all classes of wood or steel frame buildings.

* *The term Plank, as applied to cementitious building products, is a trademark of the Certain-teed Products Corporation.*
U. S. Patent Numbers, Re-20,275; 2,115,936, 2,142,305, Gypsteel Plank is manufactured under one or more of the above letters patent.

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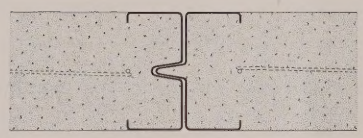
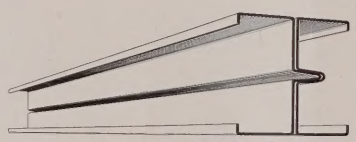
THE ADVANTAGES OF GYPSTEEL PLANK

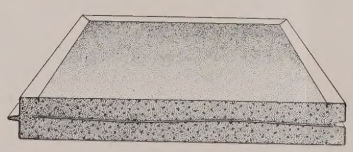
GYPSTEEL PLANK



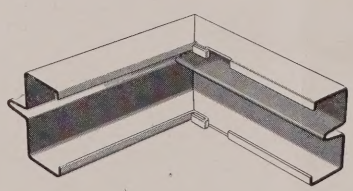
The steel tongues and grooves mesh tightly so that *adjacent units work together.* Gypsteel Plank floors and roof-decks have high uniform strength.



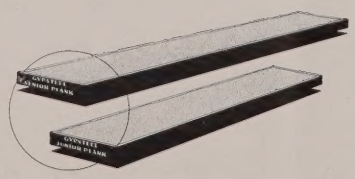
The bindings mesh to form a steel I-Beam that gives Plank its definitely calculable strength and permits you to *safely* break joints between supports. Yet both steel and gypsum are flexible enough to use on curved or warped areas.



The binding is *clinched into* the gypsum surface. Cross-section shows how steel and gypsum are flush and smooth, presenting a level, uniform surface for flooring or roofing.



Note the unique way in which the steel binding is *locked* at the corners to form a one-piece frame. This assures greater strength, a more rigid frame, and also eliminates damage in handling and shipping.



Every Gypsteel Plank unit bears an embossed signature on the groove end to identify it as the genuine original Plank*—"Senior" for the heavy duty, "Junior" for shorter spans.

LOOK at Gypsteel Plank and you'll quickly recognize the features which make it so valuable. Because it is tongued and grooved and shaped like wood plank (one of the oldest known building materials), because it has the ease of handling and adaptability of lumber, mechanics use it with confidence and skill.

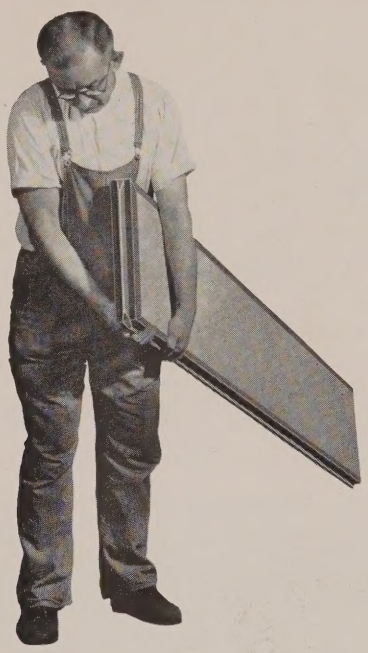
The continuous galvanized steel binding locks with abutting units to form an I-Beam, giving Gypsteel Plank its unusual strength. The gypsum core is reinforced with galvanized steel wire mesh.

At the left you see how carefully all details have been designed to assure a uniform, strong and practical product.

Add to these features the insulating properties and the fire-resistance of gypsum, lightness in weight, simplicity and adaptability of lumber and the reasons for the popularity of Gypsteel Plank will be understood. In addition, Plank will not rot, shrink or warp—it is termite and vermin-proof.

Gypsteel Plank is manufactured in two sizes to meet varying conditions of service. Each is a solid slab of factory-cast extra dense gypsum, made in a standard size, convenient to handle, adaptable to varying job conditions.

* *The term Plank, as applied to cementitious building products, is a trademark of the Certain-teed Products Corporation.*



- - - AT A GLANCE

Gypsteel *Senior* Plank is 2″ thick, 15″ wide and 10′ long and is recommended for roofs on spans up to 7′ and for floors on spans up to 5′. Weight 12 lbs. per sq. ft.

Gypsteel *Junior* Plank is 2″ thick, 15″ wide and 6′ long and is recommended for roofs on spans up to 4′ and for floors on spans up to 3′. Weight 12 lbs. per sq. ft.

SAWS EASILY

Gypsteel Plank is handled and installed just like wood. It is readily cut, sawed or bored with either hand or power tools. Erection is a simple hammer and saw job, requiring no special skill and practically no supervision.

EASY TO WORK

A plant maintenance crew or any good mechanic easily installs Gypsteel Plank because it is handled like lumber. No special equipment or knowledge is required.

Gypsteel Plank is a dry construction,—no form work, nothing to mix or pour, no delay, no waiting for the weather.

Plank is nailable. Any type of finish roofing or rough under-flooring may be nailed directly to Gypsteel Plank.

THE ADVANTAGES OF GYPSTEEL PLANK

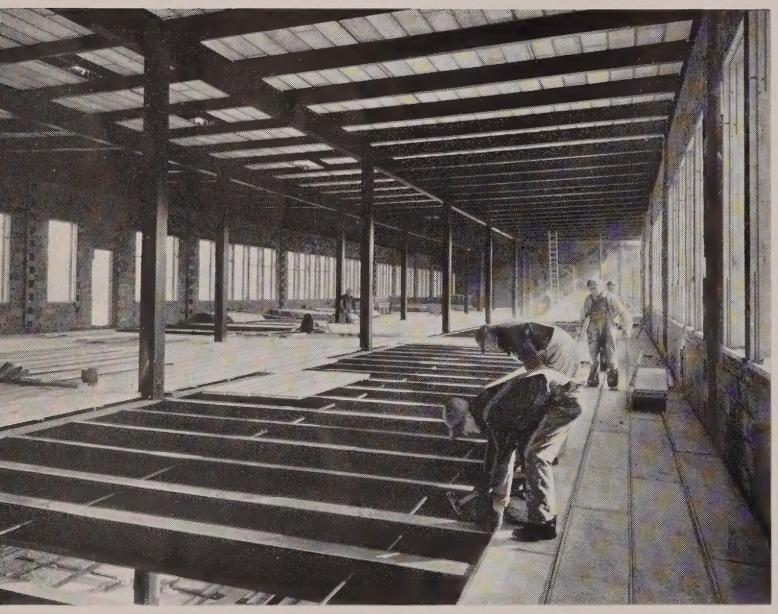
THE unusual strength which is found in Gypsteel Senior and Junior Plank is derived from the distinctive steel binding. As the units are erected, the edges mesh together, where they form a 2″ I-Beam that spans the distances between, and passes over the supporting steel joists or purlins. This steel "beam" is uniformly supported laterally by the gypsum core, giving it added stiffness and strength.

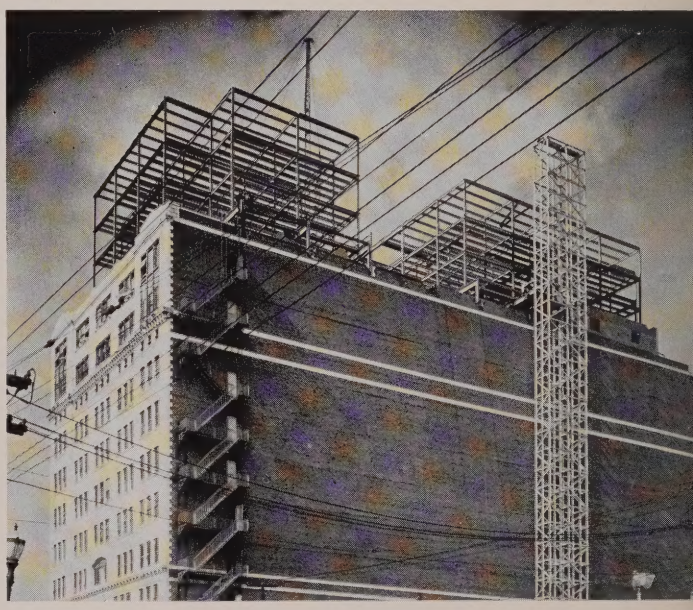
Note especially that the "tongues" and "grooves" are tapered so that they mesh as easily as wood decking, and yet firmly, to form a solid floor or roof deck. The design of this binding, which is a patented feature of Gypsteel, is such that a load applied to an individual Plank will be distributed over the adjacent Plank, through the value in "shear" of the steel tongues.

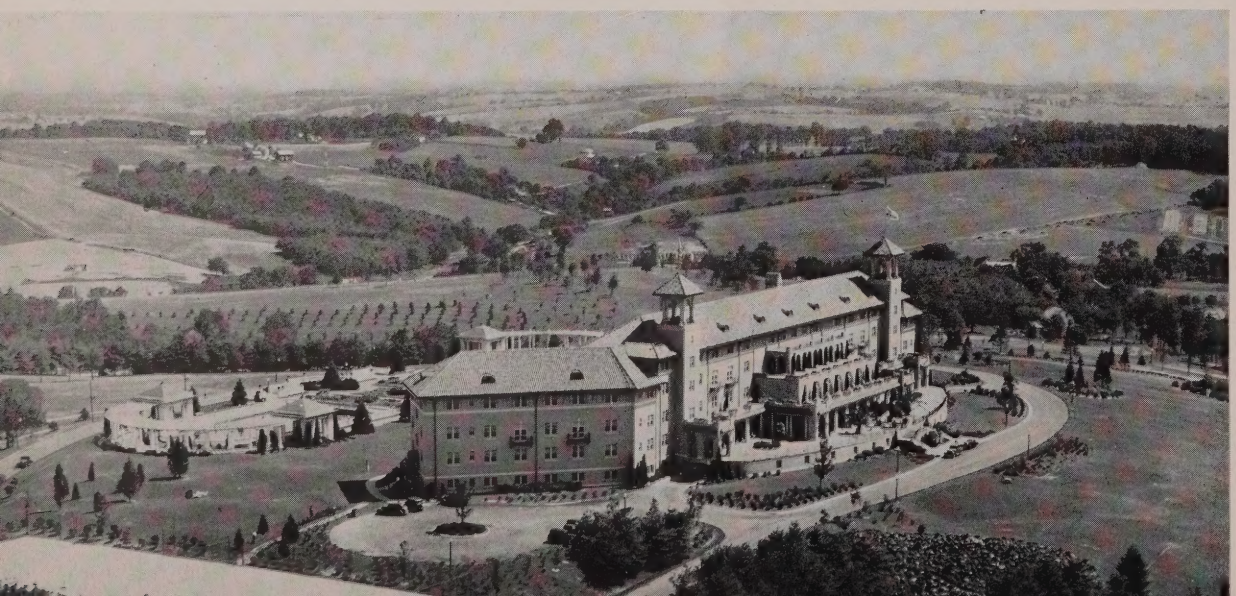
Thus, Gypsteel Plank serves to lock all units together and to evenly distribute loads that may be concentrated on one or more units. Because of these unique features, Gypsteel Plank is laid with end joints coming at random; thus providing *economy, and making practical the mass production of factory made units of standard dimensions, and eliminating the cutting, fitting and waste* otherwise necessary to suit various spans or other job conditions.

Insulation. For insulation against the transmission of heat, the composition used in Gypsteel Plank ranks among the highest of any masonry material.

Probably the most carefully compiled data on the subject of heat insulation is to be found in the yearly Guide of the American Society of Heating and Ventilating Engineers. A reference to this Guide will show that 2″ of gypsum composition such as used in Gypsteel Plank is the equivalent, in insulating value, of approx-







PICK PLANK FOR PERMANENCE

Prominent architects and engineers regularly specify Gypsteel Plank for its permanence. Note (upper left) how well Plank is adapted to steel frame construction for *both* floors and roofs. Because of its strength and rigidity as well as ultimate economy, Senior Plank was selected for the five-floor addition to the Southern Furniture Exposition Building at High Point, N.C. (above), and the Hotel Hershey at Hershey, Pa. (lower left).

imately nine or ten inches of concrete, or of an eight-inch brick wall. In most cases the degree of insulation afforded by Gypsteel Junior or Senior Plank is ample to guard against excessive heat loss. Where further insulation may be desired it is thoroughly practical to supply such additional insulation by the application over Gypsteel Plank, of material developed primarily for its insulating value.

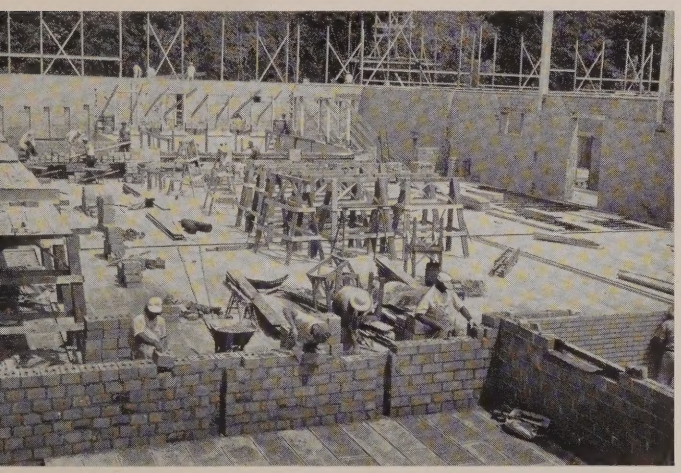
Fire Protection. Whether it's a home, hotel, university, office building or industrial structure, its owners are equally interested in protection against fire.

Gypsteel Gypsum as used in Plank is absolutely incombustible. Two inches of gypsum is universally recognized as the highest type of fireproofing and is approved in practically all cities as fire protection for beams and girders in even the tallest structures.

Anchorage. A generous supply of steel clips is furnished without additional charge, with all Plank. These are used to anchor the Plank to steel joists or beams. Of simple design, they are easily attached by nails (we recommend 4-d slater's or plasterboard nails) driven directly through the steel binding of the Plank on the female side, and will firmly hold the Plank in place.

Clips should be used at every intersection of the Plank with the steel supports, and *two nails* should be used in *every clip.*

Cutting Plank. Plank is readily cut with an ordinary hacksaw. Or, after cutting the binding, Plank may be broken off if both sides are scored with a saw or a broad blade chisel. On larger operations when more cutting is required, Plank may be economically cut by using a tile cutting saw of either pistol grip or table type.



WORK GOES ON as usual over these Gypsteel Plank floors. Other trades may follow immediately. There are no forms to remove—no waiting for "set."

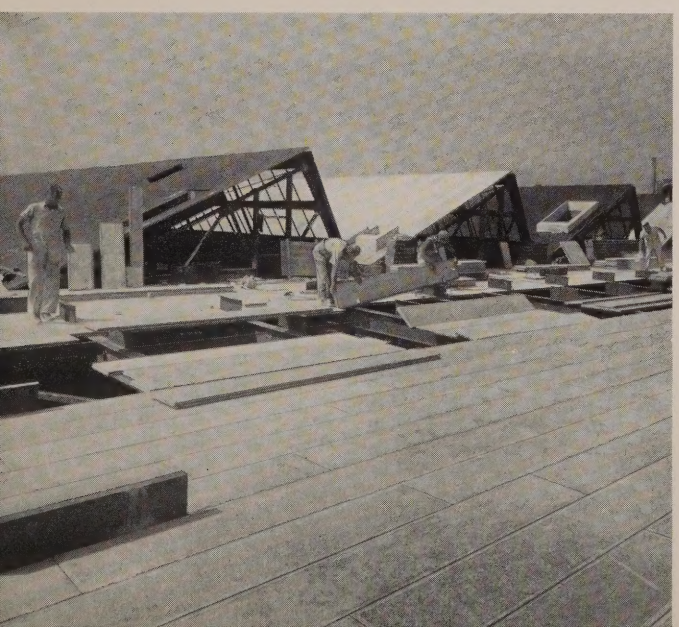
GYPSTEEL PLANK gives you storage and working space as soon as it is laid. There is no change in job routine.

. . .

ROOFS QUICKLY ERECTED. It's the simplicity of Gypsteel Plank that makes it so easy to erect. With large, convenient light-weight units, erection goes fast.

. . .

FOR ROOF GRADING, coves; for forming valley contours, etc., there is Gypsteel Composition; mixed with water and troweled in place on the job. Takes its set in about 15 minutes.



THE ADVANTAGES OF GYPSTEEL PLANK

SENIOR or Junior Plank is laid directly over either wood or steel supports of any type and of *either* uniform or variable spacing. *End joints are staggered and need not come over the supports.* This reduces cutting to a minimum and eliminates practically all waste, for a small piece left over from the last Plank in any line may be used to start the next line. The tongued and grooved joint assures every Plank being supported by a continuous steel I-Beam on the sides, and, meshing with abutting Plank, forms an integral unit of the whole area practically monolithic in effect.

Pitched Roofs. On all decks of steep pitch, additional provision should be made to take up the roof thrust. Such may be by means of stop angles, bolting Plank to purlins, etc.

Overhangs—Openings. Overhangs should not extend beyond supports more than 12″ in Plank length or 6″ in Plank width. All openings, except for small pipes, vents or downspouts should be framed out. See details on pages 16 and 17.

Curved Roofs, Warped Surfaces. The minimum radius for curved surfaces is about 90 feet and should, preferably, be limited to 120 feet. The shorter the radius and sharper the curve, the closer the purlins should be spaced to facilitate bending the Plank to the true arc. For short radii the spacings should not exceed five feet for Senior or three for Junior Plank.

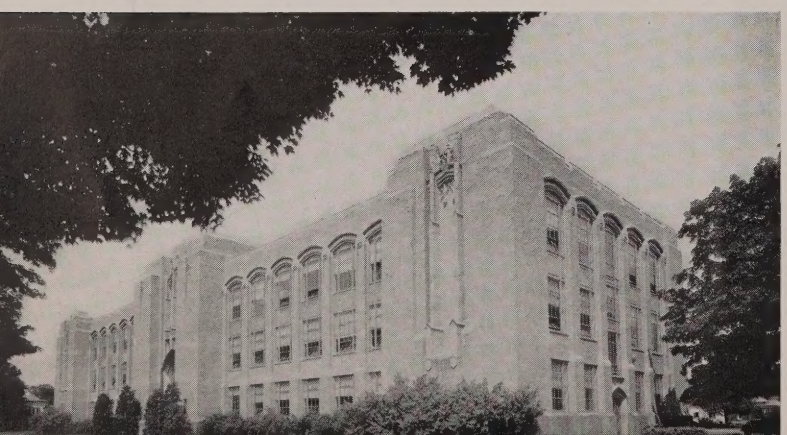
Plank will also follow warped surfaces if not too extreme. The variation in elevation between adjacent purlins should not exceed ½″ per foot of purlin length.

Advantage can be taken of this flexibility to eliminate drainage fill by varying the roof plane so as to pitch the water to the downspouts. Warping the roof

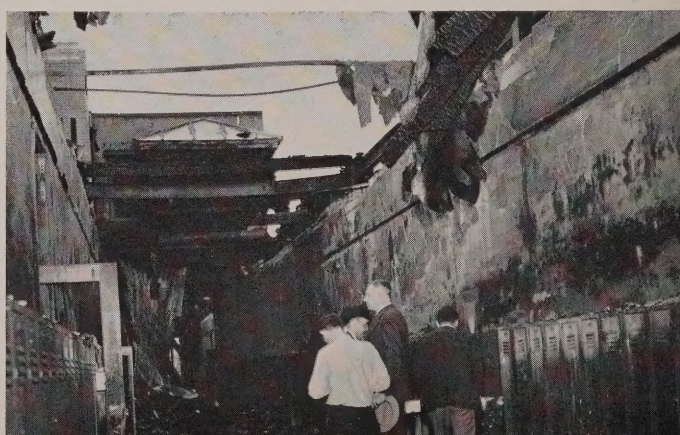
ON STEEP ROOFS as well as flat, Gypsteel Plank is handled and erected like lumber.

FOR ROOF SPANS UP TO 7 FEET, Gypsteel Senior Plank is used. For 4 feet or less specify Junior. Meets load requirements of principal cities with large safety factor.

GREATER PROTECTION NOW—When the school authorities decided on replacement for the burned roof, Gypsteel Plank was selected to assure a deck that would be safe and permanent.



FIRE-SAFE ROOF DECKS are important in any permanent building. This otherwise fireproof school had a combustible deck and the disastrous results shown followed.

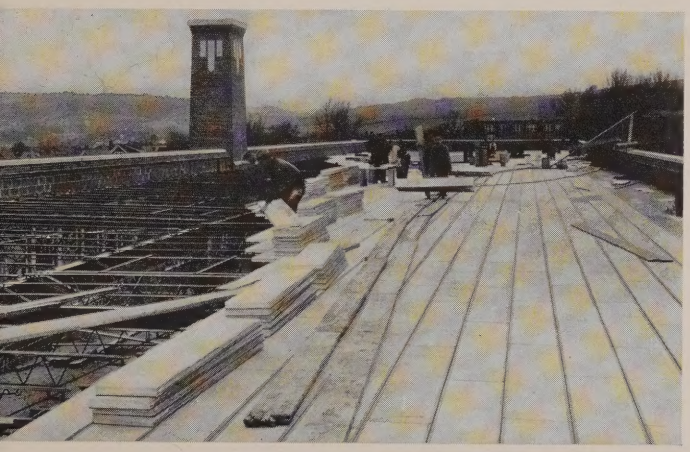


surfaces in the end bays of sloping roofs will reduce the required height of gable walls.

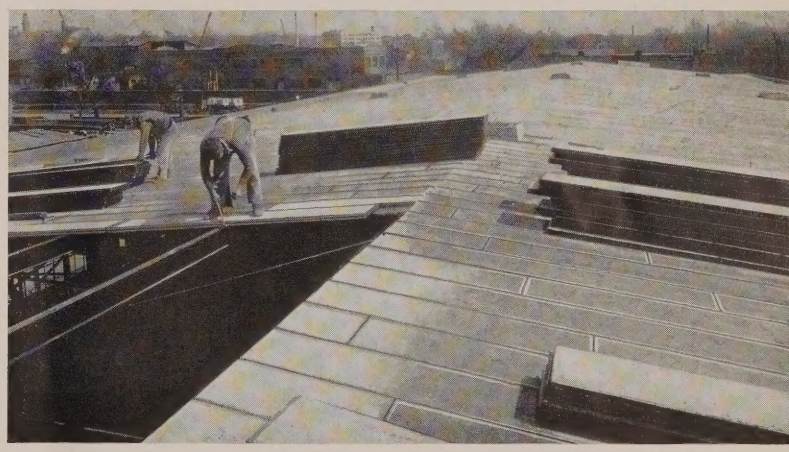
Roofing. Practically any type of standard roofing is easily applied over Gypsteel Plank. In applying built-up roofings the general practice is to follow the usual specifications for application over wood decks, nailing the first layer of paper or felt, and spot mopping, if desired, *but not mopping the entire area.* Shingle, slate, and other roofings of this type, may be nailed direct to the Plank, which should be dry before application. Square cut nails, preferably hard copper, penetrating 1½″ are recommended.

Where the nail holes in slate or tile come over the steel Plank binding, the latter may be quickly pierced with a punch; or, with his hammer, the roofer easily makes a new hole in the slate, or notches the side of the tile so that the nail will come within the body of the Plank. Curbs, heads, and end walls of monitors are quickly constructed from the same material, or may be built of Certain-teed Gypsum Partition Tile 2″ thick, solid, or 3″ thick, solid or hollow.

Painting. Many owners, having exposed roof areas, paint the Plank ceilings to improve the appearance of their buildings and to add to the life of their decks. The steel binding should first be primed with a primer recommended for use over new galvanizing. For best results the entire surface is then covered with a primer and paint using a varnish vehicle. Aluminum flake pigment mixed in the proportion of 1.5 pounds to each gallon of varnish is excellent as a primer and may be used for the finish as well. Dependence should be placed upon a responsible manufacturer who has specialized in paints for gypsum roofs.



LAID DIRECTLY OVER SUPPORTS of steel or wood, of any type, Gypsteel Plank is simply, easily applied.



MINIMUM CUTTING—End joints are staggered—need not come over supports.

"SAWTOOTH" CONSTRUCTION is one of many types of industrial roofs where Gypsteel Plank is used.

GYPSTEEL PLANK has the adaptability of wood with practically no waste.

FOR MODERN ROOF CONSTRUCTION

SLATE OVER GYPSTEEL. Slate or tile roofing as well as shingles can be nailed direct to Gypsteel Plank. Use square cut nails penetrating 1½".

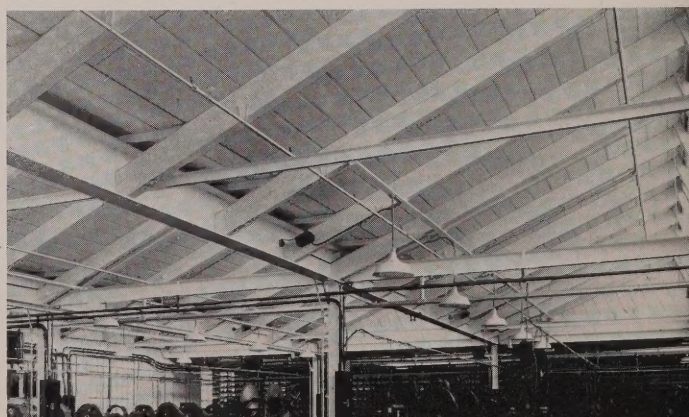
BUILT-UP ROOFS OVER GYPSTEEL. For tar and gravel or smooth surfaced built-up roofings, manufacturers recommend specifications similar to application over wood decks, nailing the first layer of felt.

ANY TYPE OF ROOF—flat, pitched, sawtooth, hipped, mansard, etc., is suitable for Gypsteel Plank.

ACROSS OR WITH THE SLOPE. Gypsteel Plank is readily adapted to either type framing. Hips and valleys are easily formed from Gypsteel composition.

CURVED OR WARPED SURFACES are practical with Plank because of its flexibility. Readily installed over purlins on the typical bow-string truss.

PAINTED FOR GREATER LIGHT. Gypsteel Plank affords an excellent base for painting, where desired. Its flat surface is a good light reflector.



GYPSTEEL PLANK FOR ROOF REPLACEMENTS

GYPSTEEL PLANK is unusually well adapted for roof replacements, particularly when it is imperative that the buildings shall not be left open because of possible interference with plant operations or damage to costly machinery and materials in process of manufacture. Gypsteel Plank is so light—12 pounds per square foot—that it may be applied over the same frame that would support practically any other type of roof. Senior Plank is suitable for spans up to seven feet, while Junior Plank may be used where they are four feet or less. It is not necessary that the purlins be uniformly spaced nor that they be parallel. Contrary to the requirements for most factory-fabricated constructions, the width of bearing is unimportant. It is not even necessary to take any preliminary measurements beyond assuring that the maximum permissible spacing is not exceeded. As joints are broken to come at random, you have a freedom from "set" requirements not possible with any other type of roof. Plank is readily cut around openings or unexpected obstructions and may even be "warped" where supports are not exactly in the same plane. Furthermore, painstaking care is unnecessary to obtain a tight fit around ventilators, windows, hips, and valleys, etc. Plastic gypsum, which bonds perfectly to Plank, can be used to patch up rough edges quickly, fill open joints at the Plank ends, rounded corners, etc. In short, here is a material that meets job conditions as it finds them, eliminates costly changes in the frame that are frequently necessary when applying new roofs, and permits a speed that assures keeping your building watertight throughout the entire replacement operation.

Gypsteel Plank is so easy to erect. As soon as you have removed a strip of the old roof two feet or more wide, you may begin to apply the new deck.

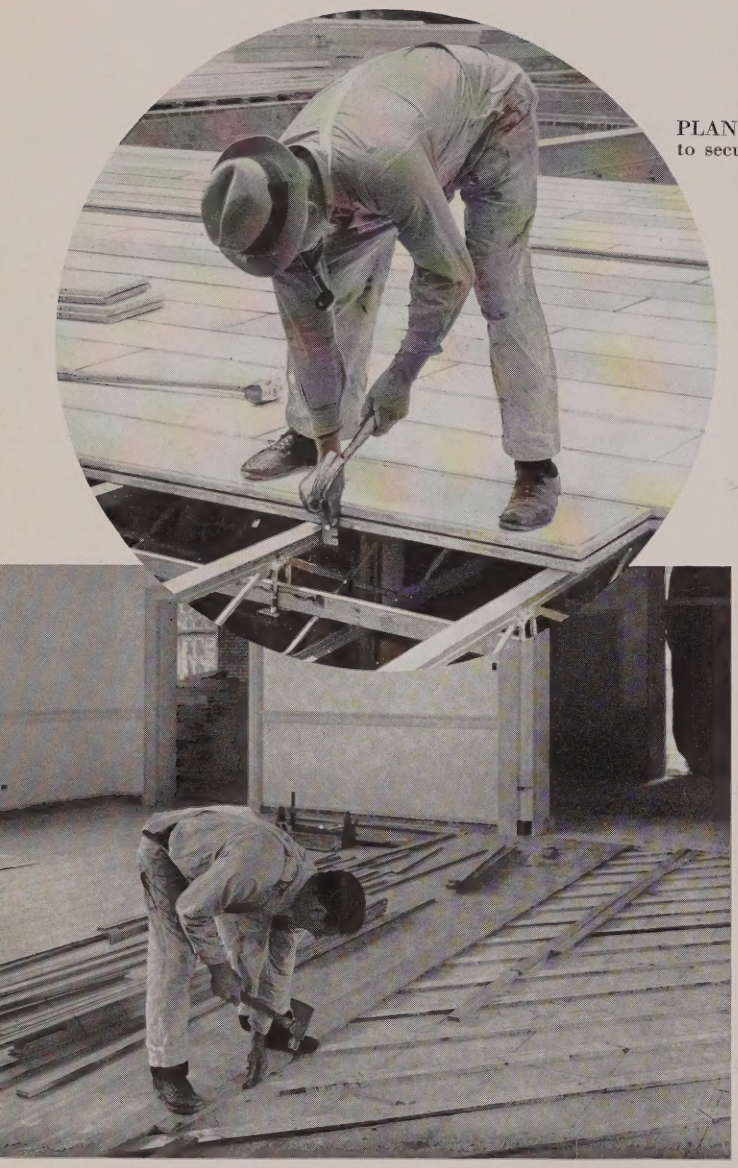
Either a temporary layer of waterproof paper or the first layer of felt of a built-up roofing may be tacked down over the Plank roof, when the day's area is completed, making the roof weather-tight.

A NEW ROOF GOES ON as fast as the old one comes off. No need to delay. No waiting for the weather with Gypsteel Plank.

. . .

PRODUCTION CONTINUES without interruption when Gypsteel Plank is used for roof replacement. Factory production need not suffer.

THE ADVANTAGES OF GYPSTEEL PLANK



PLANK CLIPS ARE EASILY ADJUSTED to securely grip the flanges of supporting steel.

QUICKLY PREPARED for linoleum, mastic tile or similar floorings, this Gypsteel Plank floor is troweled with Plankote, a leveling material manufactured to bond perfectly with Gypsteel.

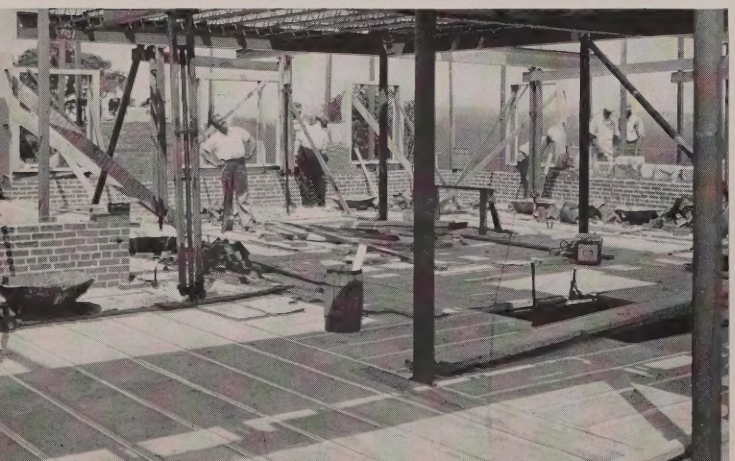
• • •

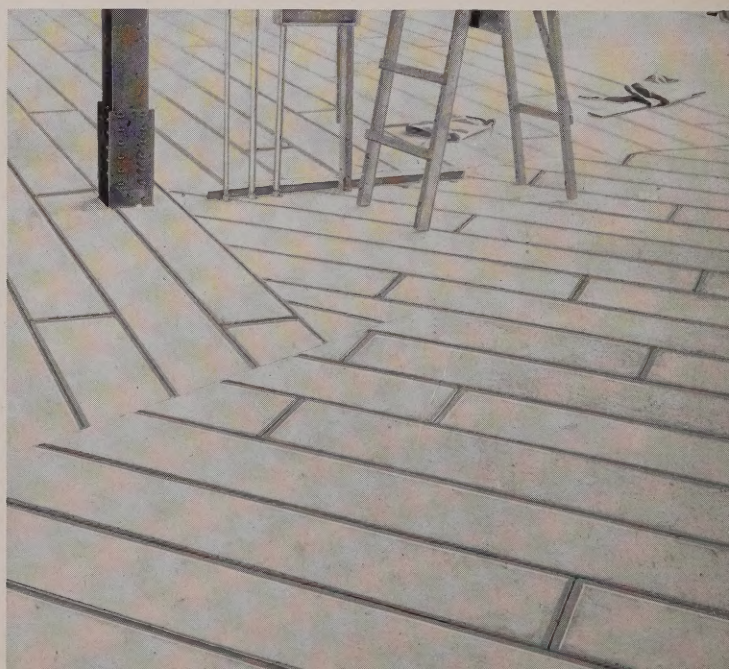
NO WASTE WITH GYPSTEEL PLANK. A short piece may fill out or start another row.

WOOD FLOORING IS ECONOMICALLY LAID over Gypsteel Plank, without losing the benefits of modern fire-safe construction.

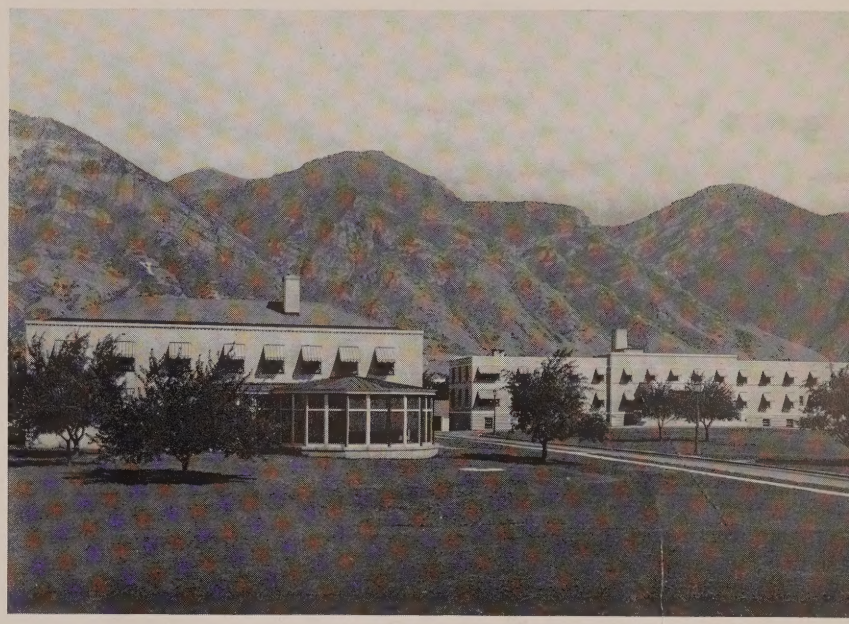
• • •

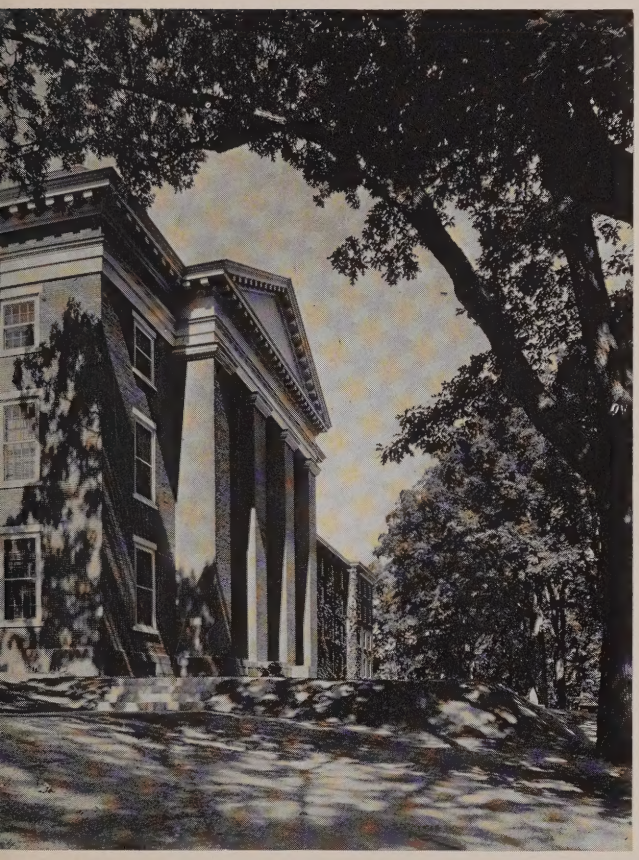
FITS CONSTRUCTION SCHEDULES. Gives speed of installation, ease of handling and requires only carpenters' tools.





THIS WESTERN HOSPITAL and nurses' home in the Rockies uses Gypsteel Plank for both floors and roof.





THIS EASTERN UNIVERSITY gives its roof Gypsteel's fire-safety, insulation against heat and cold, and freedom from maintenance.

MANY PROMINENT CHAIN STORES use Gypsteel Plank extensively for floors and roofs. They know it saves construction time.

COLLEGE AND INSTITUTIONAL BUILDINGS by the hundreds have used Gypsteel Plank. It was selected for the structural floors of this New England dormitory.

SENIOR or Junior Plank is used for floors in a manner similar to its application for roofs, and with the same structural advantages. It is suitable for spans between joists up to 5′, its ultimate strength providing a large safety factor over any normal requirements for light load buildings.

The Plank is erected with the end joints coming at random and without regard to joist spacing.

Spacing of Supports. Using Plank for floors the designer of a building may choose open-web steel joists spaced up to 3′ on centers with Junior Plank or he may use light weight rolled steel beams spaced up to 5′ apart with Senior Plank. Where a thin finish flooring, such as linoleum or composition tile, is to be applied over Plank, without an intermediate fill of substantial thickness, we recommend that spans be limited to 4′, in order to maintain a ratio between the overall thickness of the floors and the spans that will assure adequate stiffness.

Finish Flooring. Practically any type of standard finish flooring may be applied direct to the Plank. Ordinary double floors are laid by simply nailing the rough flooring direct to the Gypsteel Plank and then laying the finished flooring in the usual manner.

An excellent and economical method is to use 1 x 4's, spaced about 12″ on centers, nailed direct to the Plank, with the finished flooring nailed to them. In any event, we recommend allowing some clearance between the rows of rough flooring as a guard against warping and buckling. As an added precaution, a layer of waterproof paper is sometimes first laid over the Plank. In laying the rough flooring use 8-d wire nails, driven diagonally in the gypsum, or 6-d nails driven through the Plank binding. Ordinary sleepers may also be nailed direct to the Plank, with fill in between, if desired.

Linoleum, mastic tile and similar flooring, may be laid over a ¼″ minimum coat of Plankote* troweled over the Plank surface by the linoleum or tile contractor. Plankote is manufactured by Certain-teed Products Corporation. It bonds perfectly with Gypsteel, sets quickly and firmly, and is easily troweled to a smooth, hard finish.

For terrazzo, cement, or similar poured finishes, the Plank should be first water-proofed with a coat of tar or asphalt or the surface primed with a gypsum sealer. The finish should not be less than 1½″ thick (for best results a minimum of 2″ is recommended) and should be provided with adequate expansion joints and mesh reinforcing as recommended by the Portland Cement Association and similar trade bodies. Where a fill is used between the Plank and the finish, it should be not less than 1½″, followed by the same specification for the finish as used over concrete. * Trade mark registered U. S. Pat. Off.

ON JOBS LIKE THIS, contractors have written in to report to us that "our erection cost with Gypsteel Plank was no more than for wood."

ANOTHER WAY IT SAVES MONEY. With its light weight, Gypsteel Plank permits substantial savings in tonnage of steel for supporting framework.

SPECIFICATIONS FOR SENIOR PLANK FLOORS OR ROOFS

ALL roofs (or floors) shall be constructed of steel bound Gypsteel Senior Plank as manufactured by the Certain-teed Products Corporation. This Plank shall consist of factory molded units 2″ thick by 15″ wide by 10′-0″ long, bound and reinforced on the sides and ends by "tongued and grooved" galvanized steel channels, 2″ deep. The gypsum core shall be reinforced with steel mesh.

The "groove" channel shall have formed at the center of its web, a triangular groove running longitudinally, not less than ½″ deep, the sides of which shall form an angle with each other of not more than 20°. The "tongue" channel shall have formed in its web a wedge-like tongue which will accurately and snugly fit the above described groove.

The Plank shall be laid directly over supporting purlins (or joists or beams) to which they shall be fastened down by steel clips, furnished by the manufacturer, engaging their top flanges††, and securely nailed to the sides of the Plank with four penny slater's or plasterboard nails. Plank shall be laid with "tongues" meshing into "grooves" of adjoining units. End joints need not come over the supports, but shall be broken with the maximum practicable distance between them.

NOTE: *See footnotes under Junior Plank specification.*

SPECIFICATIONS FOR JUNIOR PLANK FLOORS OR ROOFS

All roofs (or floors) shall be constructed of steel bound Gypsteel Junior Plank as manufactured by the Certain-teed Products Corporation. This Plank shall consist of factory molded units 2″ thick by 15″ wide by 6′-0″ long, bound and reinforced on the sides and ends by "tongued and grooved" galvanized steel channels, 2″ deep. The gypsum core shall be reinforced with steel mesh.

The "groove" channel shall have formed at the center of its web a triangular groove running longitudinally, not less than ½″ deep, the sides of which shall form an angle with each other of not more than 20°. The "tongue" channel shall have formed in its web a wedge-like tongue which will accurately and snugly fit the above described groove.

The Plank shall be laid directly over supporting purlins (or joists or beams) to which they shall be fastened down by steel clips, furnished by the manufacturer, engaging their top flanges††, and securely nailed to the sides of the Plank with four penny galvanized slater's nails. Plank shall be laid with "tongues" meshing into "grooves" of adjoining units. End joints need not come over the supports, but shall be broken with the maximum practicable distance between them.

NOTE: *Most manufacturers or trade associations of manufacturers of various types of floor finishes and roofing materials have prepared detailed specifications for the application of their products over Gypsteel Plank. Many of these will be found in Sweet's Catalogs or may be obtained directly from the manufacturers. We will be glad to supply the approved specifications of the manufacturer of any finished flooring or roofing in which you are interested.*

NOTE: *On Plank roofs of all types, with more than 1½″ pitch per foot, the thrust should be taken up at the eaves by a stop angle or other member of appropriate size and strength. On very steep pitches, the top flanges of every third or fourth row of purlins may be punched to permit the bolting of the Plank direct to the steel at such intervals as the engineer may select.*

††When used over light steel joists, without bridging, insert the following words: "alternately on opposite sides".

SPECIFICATIONS FOR APPLICATION OF PLANKOTE

Insert under Linoleum or Composition Tile Flooring Specifications.

Over all Plank floors, where linoleum (or composition tile) flooring is called for, lay a leveling coat of Plankote, as manufactured by Certain-teed Products Corporation.

The surface of the Gypsteel Plank floor, as well as the joints, shall be swept thoroughly to remove any loose material or debris before beginning to lay Plankote.

Lay screeds of the thickness of finish desired. Prior to application of Plankote, dampen the Gypsteel Plank by sprinkling with water; do not saturate.

Prepare one or two bags at a time. Spread the dry Plankote over the bottom of a mixing box. Add water and allow to soak for four or five minutes. Mix thoroughly to a consistency for troweling. For job efficiency use two boxes, mixing one batch while the other is being used.

Plankote shall be applied to a minimum thickness of ¼″. First, trowel a small quantity hard into the Plank surface between the screeds; then fill in to top of screeds leveling off with a straight edge. The next day apply a skim finishing coat and trowel smooth.

NOTE: *Plankote is a leveling material designed to provide a dense, smooth base for linoleum and composition tile floorings, etc. It sets hard in from two to three hours. Therefore do not mix larger batches than will be used in one hour, and do not retemper Plankote after it has begun to harden. It shall be installed as a finishing operation, and followed by the flooring when the Plankote is thoroughly dry.*

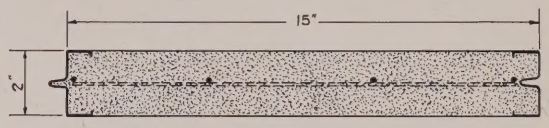
SENIOR PLANK 2" THICK, 15" WIDE, 10'0 LONG
WEIGHT, 12 LBS PER SQ. FT.
TOTAL SAFE SUPERIMPOSED LOAD

4'0"	5'0"	ROOFS ONLY	
150	* 150	6'0" 75	7'0" 75

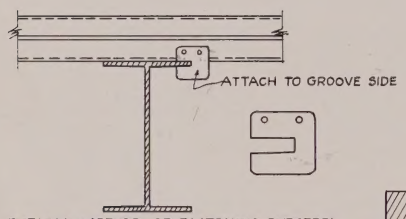
* FOR THIN FINISH FLOORING WITHOUT SUBSTANTIAL FILL USE 4'0" LIMIT ON FLOORS.

JUNIOR PLANK 2" THICK, 15" WIDE, 6'0 LONG
WEIGHT, 12 LBS. PER SQ. FT.
TOTAL SAFE SUPERIMPOSED LOAD

2'0"	3'0"	ROOF ONLY 4'0"
150	120	75



CROSS SECTION

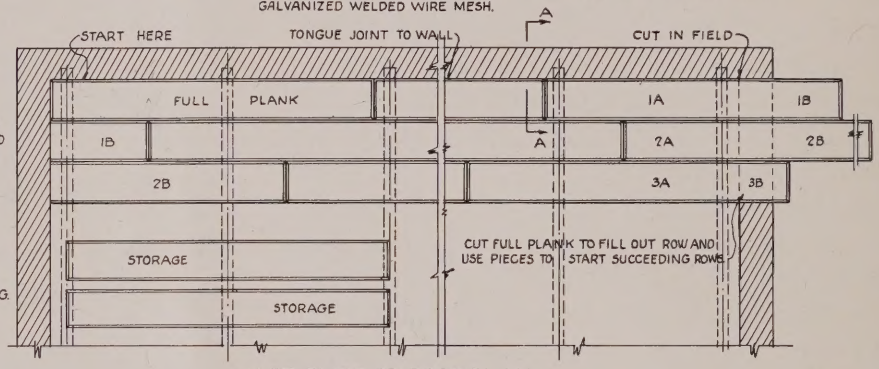


TYPICAL METHOD OF FASTENING GYPSTEEL JUNIOR OR SENIOR PLANK TO SUPPORTS.

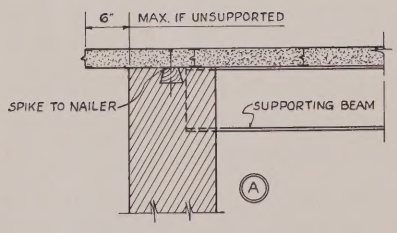
STANDARD CLIPS FURNISHED UNLESS OTHERWISE SPECIFIED. HEAVY DUTY CLIPS AVAILABLE FOR PITCHED ROOFS; ALSO SPECIAL SIZES FOR MOST OPEN-WEB JOISTS.

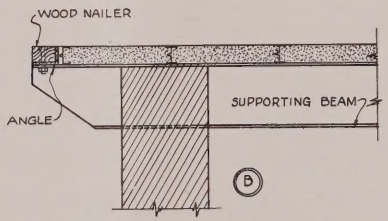
THE TONGUED AND GROOVED STEEL BINDING, WHICH ENCLOSES THE ENDS AS WELL AS THE SIDES, IS A SINGLE PIECE FRAME LOCKED AT THE CORNERS. THE GYPSUM CORE IS ADDITIONALLY REINFORCED AGAINST IMPACT WITH GALVANIZED WELDED WIRE MESH.

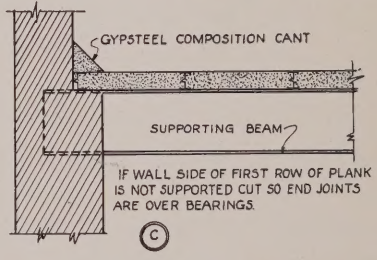
TYPICAL ARRANGEMENT OF GYPSTEEL PLANK FOR FLOORS OR ROOFS. WHERE SLOPE PERMITS STORE AHEAD AS SHOWN FOR ECONOMICAL HANDLING.



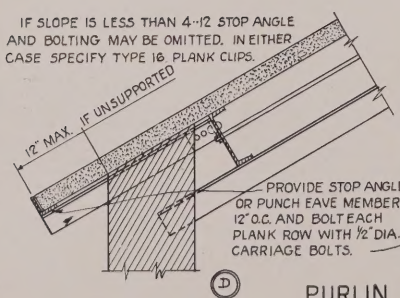
PART FLOOR OR ROOF PLAN

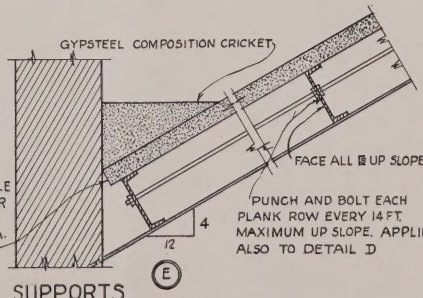




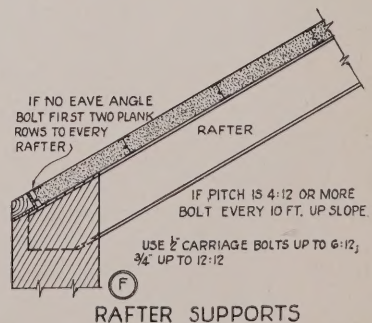

GYPSTEEL COMPOSITION CANT
SUPPORTING BEAM
IF WALL SIDE OF FIRST ROW OF PLANK IS NOT SUPPORTED CUT SO END JOINTS ARE OVER BEARINGS.
C

TYPICAL SECTION A-A


IF SLOPE IS LESS THAN 4-12 STOP ANGLE AND BOLTING MAY BE OMITTED. IN EITHER CASE SPECIFY TYPE 18 PLANK CLIPS.
12" MAX. IF UNSUPPORTED
PROVIDE STOP ANGLE OR PUNCH EAVE MEMBER 12" O.C. AND BOLT EACH PLANK ROW WITH ½" DIA. CARRIAGE BOLTS.
D

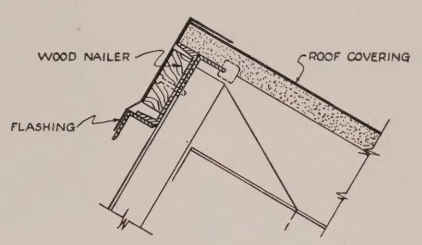

GYPSTEEL COMPOSITION CRICKET
FACE ALL UP SLOPE
PUNCH AND BOLT EACH PLANK ROW EVERY 14 FT. MAXIMUM UP SLOPE. APPLIES ALSO TO DETAIL D
4
12
E

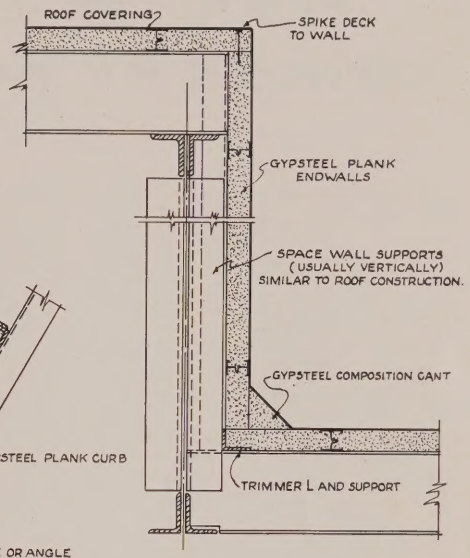
PURLIN SUPPORTS

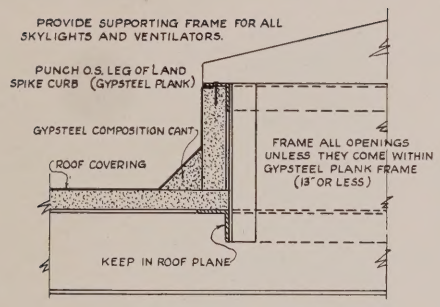

IF NO EAVE ANGLE BOLT FIRST TWO PLANK ROWS TO EVERY RAFTER
RAFTER
IF PITCH IS 4:12 OR MORE BOLT EVERY 10 FT. UP SLOPE
USE ½" CARRIAGE BOLTS UP TO 6:12; ¾" UP TO 12:12
F

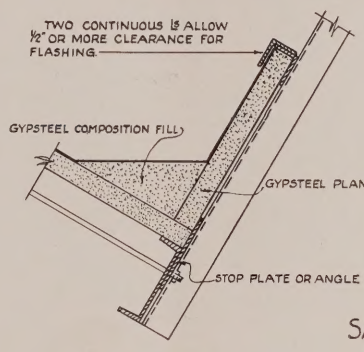
RAFTER SUPPORTS

PITCHED ROOF DETAILS




ROOF COVERING
SPIKE DECK TO WALL
GYPSTEEL PLANK ENDWALLS
SPACE WALL SUPPORTS (USUALLY VERTICALLY) SIMILAR TO ROOF CONSTRUCTION.
GYPSTEEL COMPOSITION CANT
TRIMMER L AND SUPPORT

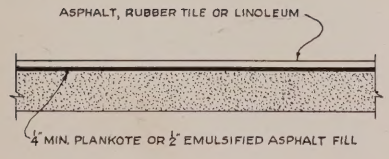

PROVIDE SUPPORTING FRAME FOR ALL SKYLIGHTS AND VENTILATORS.
PUNCH O.S. LEG OF L AND SPIKE CURB (GYPSTEEL PLANK)
GYPSTEEL COMPOSITION CANT
ROOF COVERING
FRAME ALL OPENINGS UNLESS THEY COME WITHIN GYPSTEEL PLANK FRAME (13" OR LESS)
KEEP IN ROOF PLANE

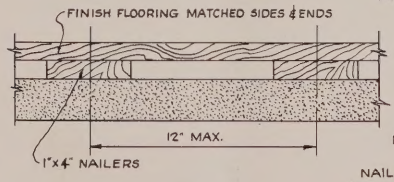

TWO CONTINUOUS 1⅝ ALLOW ½" OR MORE CLEARANCE FOR FLASHING.
GYPSTEEL COMPOSITION FILL
GYPSTEEL PLANK CURB
STOP PLATE OR ANGLE

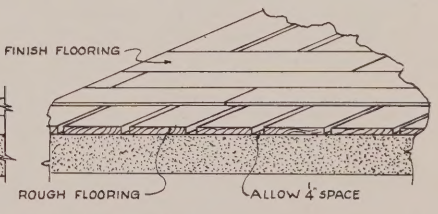
CURB DETAILS FOR OPENINGS
(MONITORS SIMILAR)

SAWTOOTH DETAILS
(MONITORS SIMILAR)

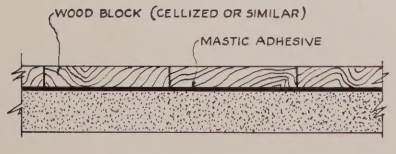
ALWAYS NAIL (DON'T MOP) FIRST LAYER OF ROOFING FELT. WHEN SLATE, TILE, SHINGLE OR COPPER ROOFINGS, FLASHING, GUTTER HANGERS, ETC. ARE ATTACHED DIRECT TO GYPSTEEL PLANK ALWAYS USE SQUARE CUT COPPER NAILS PENETRATING ¼" TO ½" IN.
LAY USUAL FELT UNDER ROOFING. (SLATE, COPPER, ETC.)

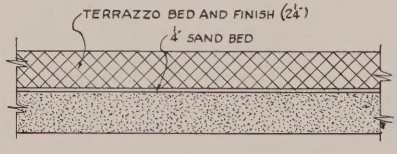


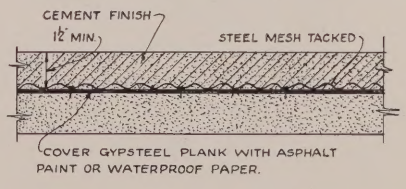




NAIL ROUGH FLOORING DIRECT TO GYPSTEEL PLANK WITH 8d NAILS DRIVEN DIAGONALLY.



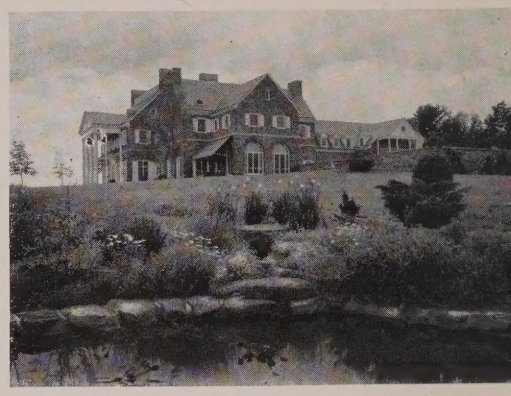




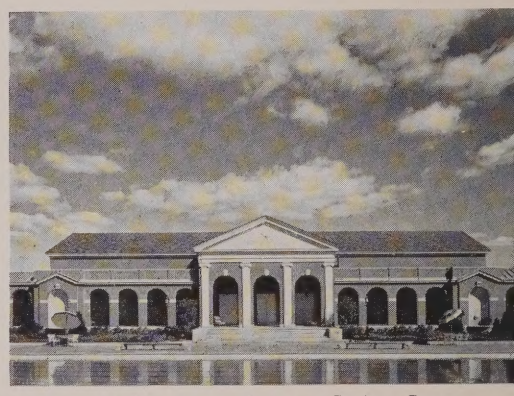
FINISH FLOORING DETAILS

A reference list of nationally known Companies who have used Gypsteel Plank

Allen, Collens & Willis, Boston, Mass.
Bagg & Newkirk, Utica, N. Y.
Beebe & Kraemer, Newark, N. J.
L. T. Bengston, Charleston, W. Va.
Bley & Lyman, Buffalo, N. Y.
Brown & Whiteside, Wilmington, Del.
Burtis Brown, Boston, Mass.
Buckler & Fenhagen, Baltimore, Md.
Albert I. Cassell, Washington, D. C.
Chandler & Palmer, Norwich, Conn.
Warren W. Chapin, New York, N. Y.
Cleverdon, Varney & Pike, Boston, Mass.
Coffin & Coffin, New York, N. Y.
C. C. Compton, Donora, Pa.
Conrad & Cummings, Binghamton, N. Y.
A. Graham Creighton, New London, Conn.
Paul G. Crout, Baltimore, Md.
Davis & Lewis, Scranton, Pa.
Desmond & Lord, Boston, Mass.
Ebbets & Frid, Hartford, Conn.
John Eberson, New York, N. Y.
Emmens & Abbott, Stamford, Conn.
R. W. Foote, New Haven, Conn.
L. E. D. Gaudreau, Baltimore, Md.
Arthur H. Gibb, Ithaca, N. Y.
Robert R. Graham, Middletown, N. Y.
Hancock & Willson, Scranton, Pa.
Harback & Kideney, Buffalo, N. Y.
S. W. Haynes & Associates, Fitchburg, Mass.
Arthur B. Heaton, Washington, D. C.
Hassell T. Hicks, Welch, W. Va.
Hinnant & Smith, Lynchburg, Va.
Lawrence J. Hopp, Pittsburgh, Pa.
Howe & Church, Providence, R. I.
John J. Howley, Scranton, Pa.
Hunting, Davis & Dunnells, Pittsburgh, Pa.
Jacoby & Everett, Allentown, Pa.
Jackson, Robertson & Adams, Providence, R. I.
Kendall, Taylor & Co., Boston, Mass.
D. D. Kieff, Watertown, N. Y.
Melvin L. King, Syracuse, N. Y.
Linn Kinne, Utica, N. Y.
Kubitz & Koenig, Baltimore, Md.
A. T. Lacey & Son, Binghamton, N. Y.
Lovelace & Spillman, Bethlehem, Pa.
William I. La Fon, Jr., Southampton, L. I., N. Y.
Thomas Lamb, New York, N. Y.
J. Frederick Larson, Hanover, N. H.
William H. Lee, Philadelphia, Pa.
William E. Lehman, Newark, N. J.
Mark Linenthal, Boston, Mass.
Lockwood-Greene Engineers, Inc., New York, N. Y.
B. J. McCandless, Pittsburgh, Pa.
McKim, Mead & White, New York, N. Y.
McLaughlin & Burr, Boston, Mass.
Meanor & Handloser, Charleston, W. Va.
Metcalf & Eddy, Boston, Mass.
Miller & Martin, Birmingham, Ala.
Doughlas Orr, New Haven, Conn.
Payne & Keefe, New London, Conn.
Perry & Bishop, New Britain, Conn.
Charles G. Poggi, Elizabeth, N. J.
Porter & Lockie, Washington, D. C.
Ellwood D. Powers, Newark, N. J.
Bernard H. Prack, Pittsburgh, Pa.
William J. Provost, Stamford, Conn.
Purdy & Henderson Company, New York, N. Y.
Randall & Vedder, Syracuse, N. Y.
Maurice Reidy, Boston, Mass.
Robinson, Stanhope & Manning, Wilmington, Del.
James Gamble Rogers, New York, N. Y.
T. T. Sansbury, Parkersburg, W. Va.
P. Kenneth Sargent, Syracuse, N. Y.
A. J. Scullen, Washington, D. C.
Elwyn E. Seelye, Inc., New York, N. Y.
Jesse M. Shelton, Atlanta, Ga.
Silverman & Levy, Philadelphia, Pa.
J. E. Sirrine & Co., Greenville, S. C.
Edward C. Smith, Poughkeepsie, N. Y.
Starrett & Van Vleck, New York, N. Y.
Benjamin Rush Stevens, Jr., Philadelphia, Pa.
Stevens, Curtin & Mason, Boston, Mass.
Taylor & Fisher, Baltimore, Md.
Thalheimer & Weitz, Philadelphia, Pa.
Tietig & Lee, Cincinnati, Ohio
Tooker & Marsh, New York, N. Y.
Horace Trumbauer, Philadelphia, Pa.
Voorhees, Gmelin & Walker, New York, N. Y.
Stanley Walborn, Wilkes-barre, Pa.
Wells, Hudson & Granger, Hanover, N. H.
W. H. Whitlock, Binghamton, N. Y.
Whiteman, Requardt & Smith Baltimore, Md.
Williams Coile & Pipino, Newport News, Va.
T. H. Williams & Son, Utica, N. Y.
Tudor R. Williams, Scranton, Pa.
William Wilson, New York, N. Y.
Carlton Wood, Clarksburg, W. Va.
J. R. Worcester & Company, Boston, Mass.
Wright, Ellis & Wright, Syracuse, N. Y.
A. F. Wysong & Company, Charleston, W. Va.
Zantzinger & Borie, Philadelphia, Pa.



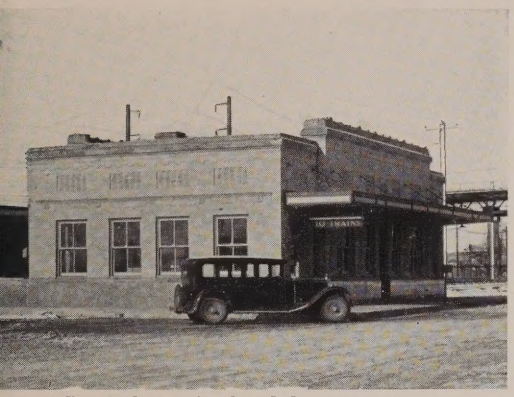
Mayfield House, estate of John N. Conyngham. Francis A. Nelson, Architect.



Athletic group, Saratoga Springs Spa. Dwight James Baum, Architect.

Store No. 100. Neisner Bros., Inc., Cincinnati, Ohio. Plank floors and roofs.

Dormitory, Conn. Coll. for Women, New London, Conn. Shreve, Lamb, and Harmon, Architects.

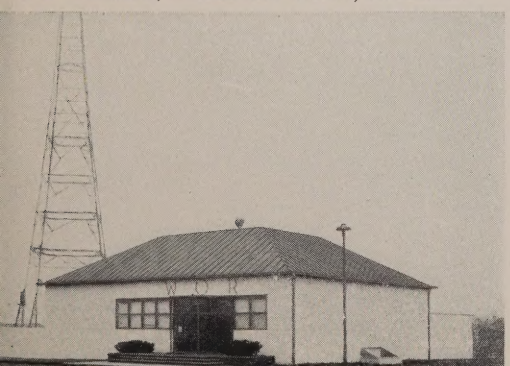


Pennsylvania Railroad Co. passenger Station, Norristown, Pa.

Goodyear Rubber Co. Tire and Service Station, Boston, Mass.

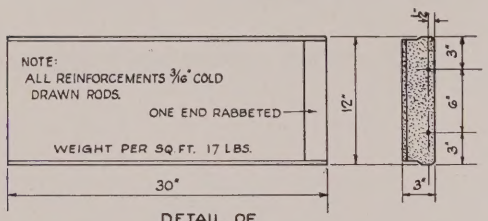
Super Sales & Service Station, Gulf Refining Company, Pittsburgh, Pa.

WOR 50,000 watt transmission station, Carteret, N. J. Voorhees, Gmelin and Walker, Architects.



A reference list of nationally known Companies who have used Gypsteel Plank

Aeolian American Corporation
Aluminum Company of America
Allentown-Bethlehem Gas Co.
American Car & Foundry Company
American Gas & Electric Company
American Locomotive Company
American Oil Company
American Rock Wool Co.
American Smelting & Refining Co.
American Water Works Association
Armour & Company
Ashtabula Bow Socket Company
Atlantic Refining Company
P. Ballantine & Sons
Baltimore & Ohio R.R. Company
Bell Telephone Company
Bethlehem Shipbuilding Corporation
Bethlehem Steel Corporation
Bogota Paper & Board Corporation
Borden Co.
Boston Elevated Railway
Cannon Mills
Celanese Corporation of America
Cincinnati Milling Machine Company
Cleveland Plating & Galvanizing Co.
Climax Molybdenum Company
Collins & Aikman Corporation
Columbia Radiator Company
Congoleum-Nairn, Inc.
Continental Oil Company
Corning Glass Works
Crane Company
Duke Power Co.
Eagle Manufacturing Co.
E. I. du Pont de Nemours & Co., Inc.
Edward G. Budd Mfg. Company
Electric Boat Company
Fiberloid Corporation
General Aniline Works, Inc.
General Electric Company
General Motors Corp. & Subsidiaries
General Time Instruments Corporation
Glen Alden Coal Company
B. F. Goodrich Company
Goodyear Service, Inc.
H. L. Green Company, Inc.
Gulf Refining Company
Halcomb Steel Company
Harris Structural Steel Corporation
Hershey Chocolate Corporation
Hoffman Beverage Company
H. P. Hood & Sons, Inc.
Hudson Valley Fuel Company
Hunter Pressed Steel Co.
Hygrade-Sylvania Corporation
Imperial Wall Paper Company
Ingersoll-Rand Company
Jersey Central Power & Light Company
Johns-Manville Company
Endicott Johnson Corporation
Jones & Laughlin Steel Corporation
Kendall Refining Company
Keuffel & Esser Company
Kroehler Manufacturing Company
Liggett Drug Company
Linde Air Products Company
Liquid Carbonic Corporation
Maryland Distillery, Inc.
McCall Corporation
Monroe Calculating Machine Co., Inc.
Morrison Steel Products, Inc.
National Clothing Company
National Portland Cement Company
National Sugar Refining Co. of N. J.
Neisner Brothers, Inc.
Otis Elevator Company
Pennsylvania Railroad Company
Philadelphia Electric Co.
C. H. Phillip Chemical Co.
Pittsburgh Plate Glass Company
Public Service of New Jersey
Punxsutawney Beef and Provision Co.
Pure Oil Company
Quaker State Oil Company
Railway Express Agency, Inc.
Remington Arms Company, Inc.
Richfield Oil Corporation
St. Joseph Lead Company
Sanitary Grocery Company
Scott Paper Company
Scovill Manufacturing Company
Scranton Electric Company
Scranton Lace Company
Seneca Knitting Mills
Sinclair Refining Company
Singer Sewing Machine Company
S. K. F. Industries, Inc.
Socony-Vacuum Oil Company, Inc.
Sonoco Products Company, Inc.
E. R. Squibb & Sons
Standard Oil Company of Kentucky
Standard Oil Company of New Jersey
Star Brewing Co.
Sun Oil Company
Swift & Company
Synthane Corporation
Syracuse Electro Typing Co.
Taylor Instrument Company
The Baltimore Pure Rye Distilling Co.
The Bead Chain Manufacturing Co.
The Andrew Jergens Company
The Texas Company
Tidewater Oil Company
Turner & Seymour Mfg. Co.
Union Electric Light & Power Co.
United Dressed Beef Co.
United Gas Improvement
United States Metals Refining Co.
U. S. Rubber Products, Inc.
United Shoe Machinery Company
Victor Food Corporation
Waterbury Buckle Company
Western Electric Company
F. W. Woolworth Company
Worcester Street Railways Co.
Yale & Towne Manufacturing Co.

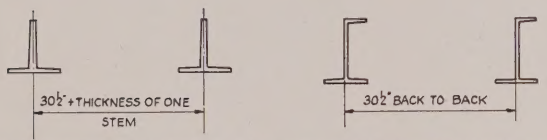


DETAIL OF GYPSTEEL
30" STANDARD ROOF SLABS

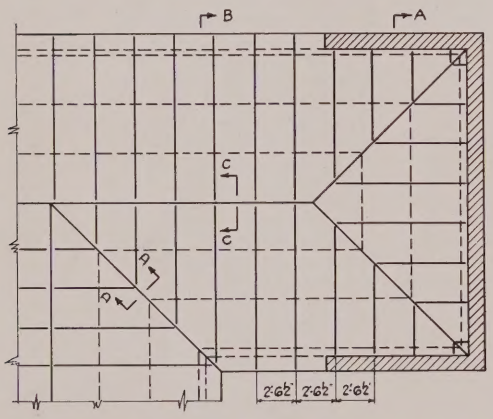
SAFE LOAD IN POUNDS PER SQUARE FOOT FOR GYPSTEEL SUB PURLINS AND TEES

Allowable fibre stress 18000 # Per. sq. in. $M = \frac{WL^2}{10}$ weight of subpurlins have been deducted

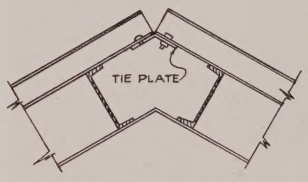
SPAN	GYPSTEEL SUB PURLIN	STANDARD TEES					
		2"×2"×¼" 3.56#	2½"×2½"×¼" 4.10#	2½"×2½"×5/16" 4.90#	2½"×2½"×¼" 4.60#	2½"×2½"×⅜" 6.40#	3"×3"×5/16" 6.70#
5'-0"	143	59	73	94			
5'-6"	118	49	61	77	80		
6'-0"	99		50	65	67	93	
6'-6"	84			55	56	79	100
7'-0"	72			47	49	68	86
7'-6"	63				42	59	75
8'-0"	55					51	65
8'-6"	49						57
9'-0"							51



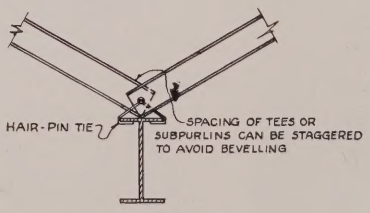
SPACING FOR TEES AND GYPSTEEL SUB PURLINS



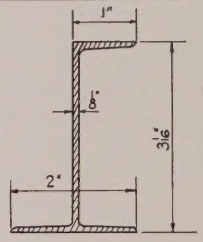
PART PLAN OF HIP AND VALLEY ROOF



RIDGE DETAIL C-C

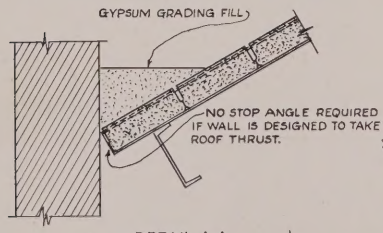


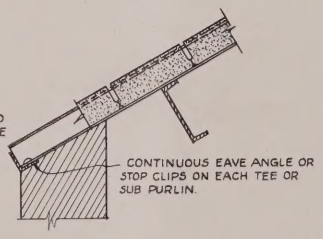
VALLEY DETAIL D-D

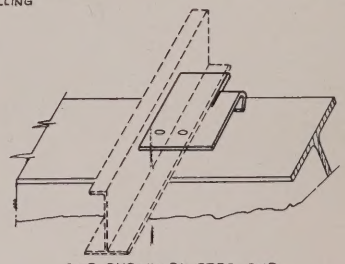


GYPSTEEL SUB PURLIN

WEIGHT PER. LIN. FT. = 2.65 LBS.
AREA = 0.775 SQ. IN.
MOMENT OF INERTIA = 1.079 IN.⁴
SECTION MODULUS = 0.603 IN.³

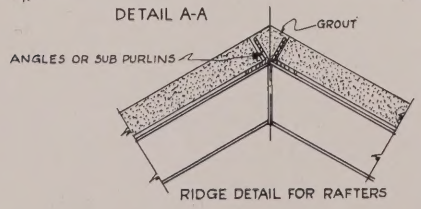






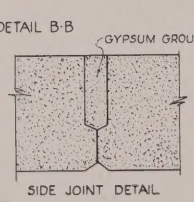
SUB PURLIN RIVETED CLIP

DETAIL A-A

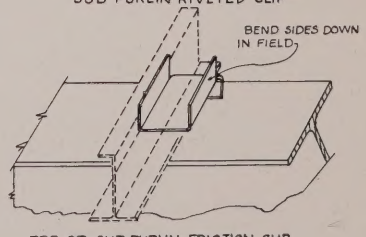


RIDGE DETAIL FOR RAFTERS

DETAIL B-B



SIDE JOINT DETAIL



TEE OR SUB PURLIN FRICTION CLIP

GYPSTEEL Pre-Cast Short Span Roof Slabs are reinforced rectangular solid units of Gypsteel Composition manufactured in a standard length of 30″ only. The slabs are 3″ thick solid and are reinforced with 3/16″ cold drawn steel rods.

The slab is set upon the bottom flanges of Gypsteel Rolled Steel Sub-Purlins, spaced about 30⅜″ back to back. The Gypsteel Sub-Purlins span the distances between and rest upon the main purlins or trusses, to the top flanges of which they are either bolted, clipped or spot-welded. One end of the slab is notched on the top side to fit under the head or top flange of the sub-purlin.

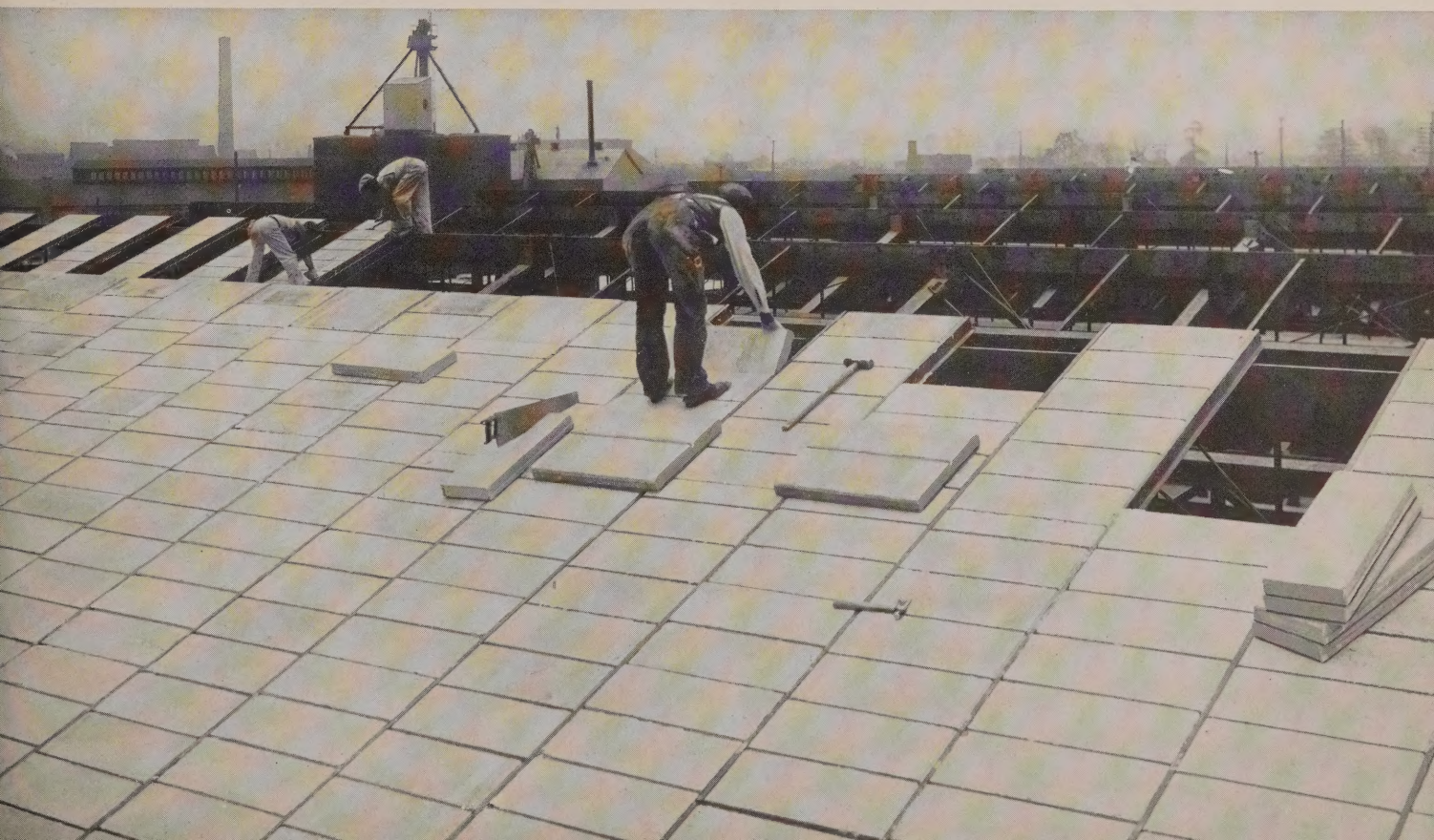
Light rail, tee, or angle sub-purlins may also be used in a similar manner with Gypsteel Short Span Slabs.

The spaces between the sides and ends of the slabs, and over the intervening flanges, stems of tees, etc., are solidly filled with gypsum grout, which is leveled flush with the top surface of the Slabs.

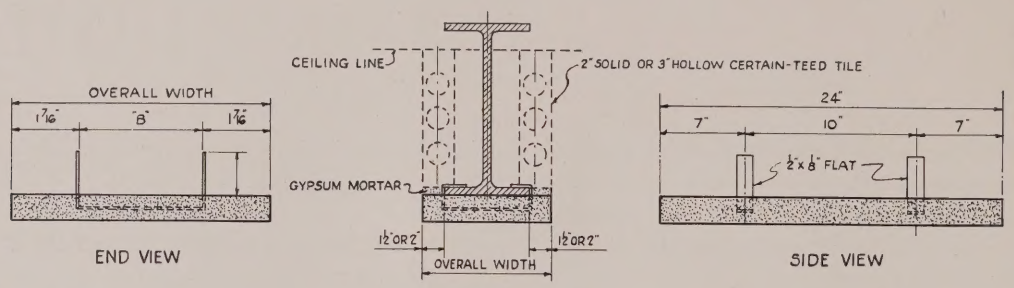
SPECIFICATIONS FOR GYPSTEEL PRE-CAST SHORT SPAN ROOFS

All roof decks shall consist of Gypsteel Short Span Pre-Cast Roof Slabs 3″ thick, solid, manufactured by Certain-teed Products Corporation. These slabs shall be supported by Gypsteel Sub-Purlins (or by tees or light rails designed safely to carry a live load of ___pounds per square foot.)

Slabs shall span the distance between, and rest directly upon, the horizontal flanges of the sub-purlins. The joints between the sides of the slabs formed by bevelled ribs molded along the bottom side-edges, and the spaces between the ends of slabs, are to be flushed solid with gypsum grout, and levelled off flush with the top surface.



BEAM AND GIRDER FIRE PROOFING



STANDARD SOFFIT

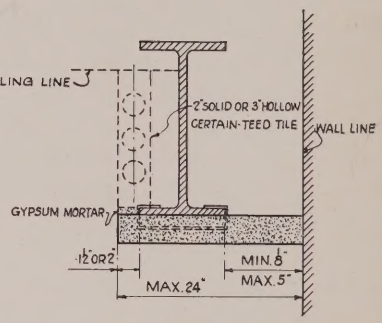
MARK	"B"	OVERALL WIDTH	AREA PER LIN. FOOT OF SOFFIT
X4	4 1/8"	7"	0.58
X6	6 1/8"	9"	0.75
X7	7 1/8"	10"	0.83
X8	8 1/8"	11"	0.92
X9	9 1/8"	12"	1.00
X10	10 1/8"	13"	1.08
X12	12 1/8"	15"	1.25

SPECIAL WIDTH SOFFITS MADE TO ORDER TO FIT GIRDERS, SPANDRELS, CHANNELS AND SPECIAL JOB CONDITIONS.

ALL SOFFITS (STANDARD OR SPECIAL) ARE 2" THICK AND 24" LONG AND ARE SOLD BY THE SQUARE FOOT.

TILE FOR BEAM HAUNCHES ARE FURNISHED IN STANDARD SIZE OF 12" × 30"

FIGURE 1-TON OF CERTAIN-TEED BLOCK MORTAR FOR EACH 1500 SQUARE FEET OF HAUNCH.



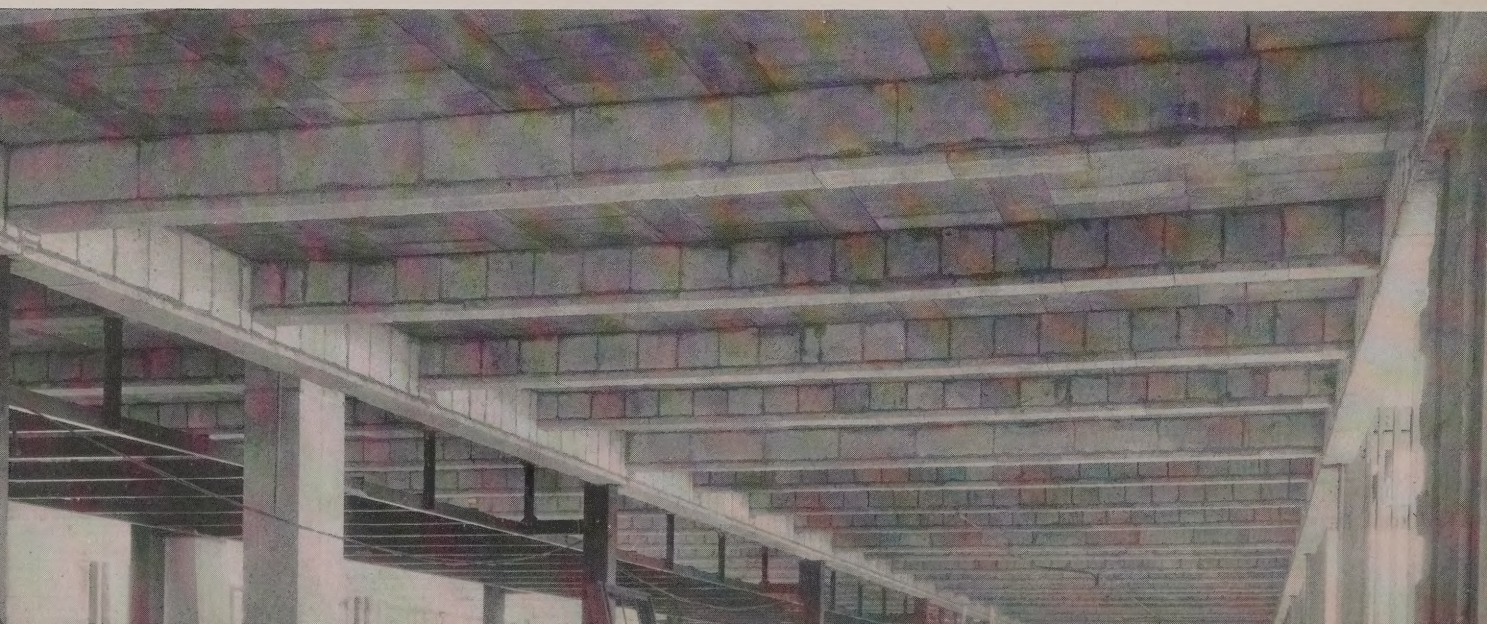
EXAMPLE OF SPECIAL SOFFIT

GYPSTEEL Soffits are used in combination with Certain-teed Gypsum Partition Tile to encase those portions of floor or roof beams and girders (and also trusses) that are not covered and protected by the floor or roof system itself.

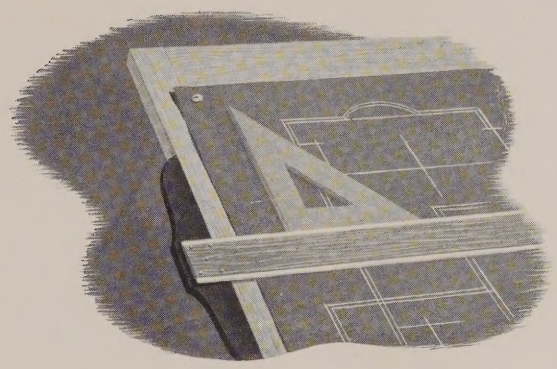
They may be used not only with Gypsteel Plank floors and roofs but also with any type of fireproof floor or roof construction. They are approved by the building departments of most cities for first-class fireproof buildings. Gypsteel Standard Soffits will fit the flanges of the most commonly used steel members. Special sizes are available to order to meet almost any condition.

SPECIFICATIONS FOR BEAM AND GIRDER FIREPROOFING

The webs and flanges of all beams and girders projecting below the pre-cast ceiling shall be fireproofed by applying to their soffits Gypsteel Soffit Slabs as manufactured by Certain-teed Products Corporation. Protection shall be at least 2″ thick and shall project at least 1½″ beyond the flange toes. Sides shall be protected with Certain-teed Gypsum Partition Tile, 3″ thick, hollow (or 2″ thick, solid) laid in Gypsum Block Setting Mortar, and set flush with the outside edges of the Soffit Slabs.



EXPERIENCED ASSISTANCE AVAILABLE TO HELP YOU



WHEN you are planning your next construction job, the Gypsteel Engineering Department is at your service. Its personnel is well qualified to render assistance in the design of steel work which will assure maximum Gypsteel Plank economy. They give you the benefit of long experience in steel design and structural steel shop practice. They are always ready to cooperate with you, your engineers and architects in developing plans for the use of Plank.

A Service Department experienced in Plank installation is maintained also, advising and assisting builders in solving unusual problems and in obtaining the lowest costs in application.

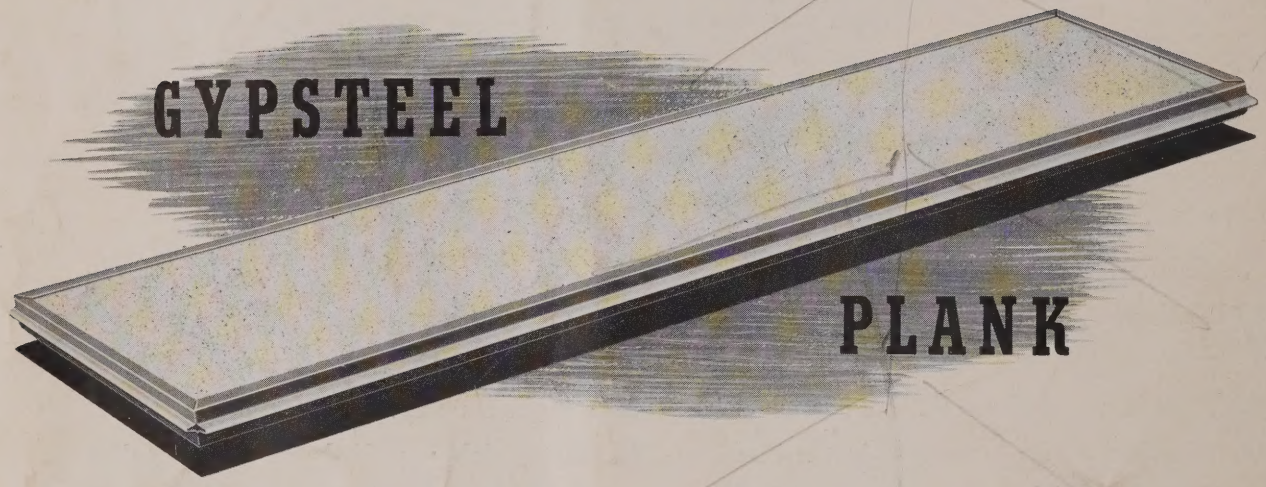
In considering our extensive facilities, it is important to remember Gypsteel* Plank is a Certain-teed product. Thus Gypsteel has behind it the resources of one of the country's largest gypsum producers, operating mines and manufacturing plants in many strategically located parts of the country. Gypsteel Plank is made to the same high standards as all Certain-teed building products.

"Certain-teed*" Gypsum Products include "Certain-teed" Gypsum Partition Tile for non-load-bearing partitions, "Bestwall*," the original gypsum wallboard, "Beaver*" gypsum lath and a line of gypsum plasters under the "Acme*," "Agatite*," "Beaver*" and "Certain - teed*" brands.

Certain-teed Plants – GYPSUM; Akron, N.Y.; Acme, Texas; Fort Dodge, Iowa; Blue Rapids, Kansas; Grand Rapids, Mich. ROOFING: East St. Louis, Ill.; Marseilles, Ill.; York, Pa.; Richmond, Calif.; Niagara Falls, N. Y.; Kansas City, Mo.; Port Wentworth, Ga. FIBRE BOARD: Buffalo, N. Y.; Thorold, Ont., Canada.

CERTAIN-TEED PRODUCTS CORPORATION, GENERAL OFFICES : NEW YORK, N. Y.

*TRADEMARKS REG. U. S. PAT. OFF.



GYPSTEEL PLANK

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